Regional Transportation Model Phase II

2030 Model Presentation to the Planning Commission
May 24th, 2006

Michael C. Piernicky, PE, PTOE
Olsson Associates

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Agenda

- Summary of Network Analysis
- Network Analysis Matrix
- Network Maps
- Network Travel Time Comparison
- User Cost Analysis
- LOS Summaries
- Network Volumes
- Upcoming Schedule
- Questions

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LRTP Update

Comp Plan/LRTP 2030 UPDATE

Alternative Sketch Network Analysis

In order to look at a future transportation network, it is necessary to first understand what traffic will look like in the future, based upon the accepted land use plan. The first step in this process was running the calibrated traffic model using the 2030 land use plan to see the effects on various networks.

The Continuing Growth Base Network was created to provide paved streets to the growth areas identified in the land use plan, but a number of its street widths were scaled back from what was shown in the 2025 network, in order to be more fiscally constrained.

Based on the model analysis, eleven sketch networks were developed to look at ways of providing needed transportation infrastructure to serve the future land uses. These were based on input received from the Planning Commission and the MPO Technical Committee. Of the alternatives analyzed, there were minimal differences between them. The one major factor that this analysis pointed out is that while at the current time (based on the 2004 Calibrated model) the average travel time for each trip is 7.9 minutes, the 2030 land use and networks will increase that to a range of between 13.5 to 14.1 minutes.

Traffic volumes on each link within the networks were determined under the 2030 land use scenario, allowing for an estimation of the number of lanes that will be needed on each link in the future. While it is not realistic to expect to be able to construct all these lanes with the limited funding available through 2030, the needed number of lanes will be shown in an illustrative map to ensure that sufficient right-of-way is obtained for these streets in the event funding does become available or community growth varies from the land use plan to the point where these streets are needed sooner than projected.

The next step in the process was estimating the cost of each network. Since an in-depth phasing plan of when each link will need to be constructed cannot be done at this time, all project costs are in 2006 dollars with no inflation.

An estimation of the revenue that will be available for funding roadway improvements was also completed. While this estimate does include some inflation, the funds primarily increase due to the increased population that will accompany the growth of the future land use plan. The estimate does not include any additional funding sources outside of what is currently available. The revenue estimate does assume that considerable amounts of outside funds will be made available to the City (State or Federal tax dollars, bond issues, new taxes, etc.) for construction of certain high cost improvements (Antelope Valley, South and East Beltways, etc.).

In order to assist in analyzing the various networks, a benefit to cost analysis was performed. The basis of this comparison was using the 2030 traffic on the 2004 network. The benefits derived in each case were savings in motorist time and vehicle operating costs versus the overloaded 2004 network. The analysis looked at the benefits of each alternate and then compared them to the costs for building the improvements detailed in each of the networks. While none of the alternative networks greatly stood out from the others based on this analysis, the approved 2025 network did have the highest benefit to cost ratio.

The apparent reason why the 2025 network showed the best benefit/cost ratio is due to the fact that a four-lane roadway only costs about $1 million more than a two-lane roadway when both are initially built. The attempts to save costs using the Continuous Growth Base Network by reducing four-lane roads to two-lane roads would actually be more costly in the long run. While the reduction in number of lanes would save some costs, the benefits provided by the extra lanes outweighed the savings.

Based on the fact that the 2025 network has the lowest average trip time and the best benefit to cost ratio, we recommend that the 2025 plan continue to be the base transportation network used in the Long Range Transportation Plan. Public Works recommends that the additional roadway improvements identified in the Continuous Growth Base Network (above those in the 2025 network) also be included as the preferred alternative. We would also recommend including the six-laning of O Street (as recommended by the MPO Technical Committee) and Cornhusker Highway in the preferred alternative.

LRTP Update

- Alternative Networks: Planning Commission & Tech. Committee Direction (March 8, 9 & 30)

Revised 05/23/06

Long Range Transportation Plan 2030 Update

Alternative Transportation Network Sketch Plans

												Added Network Alternatives				
No	Street	Limits	Improvement	Base	A1a	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
1	84th Street	O Street to US 6	6 Lanes	2030 CGBN			X	X		X			X	X		
2	98th Street	Pine Lake to Adams	4 + Turn Lanes			X		X	X	X		X		X	X	
3	Highway 2	Van Dorn to East Beltway	6 Lanes			X	X	X		X		X	X	X		
4	Highway 2	Van Dorn to Old Cheney Road	Grade Separations						X						X	
5	O Street / Pine Lake Road / Pioneers Blvd. / Adams Street	84th Street to East Beltway	4 + Turn Lanes			X	X	X	X	X		X	X	X	X	
6	Superior Street	I-80 to Cornhusker Hwy	6 Lanes				X		X				X		X	
7	US 6 (Cornhusker Hwy)	I-80 Exit 399 to I-80 Exit 409	6 Lanes			X		X		X		X		X		X
8	33rd Street/40th Street & 48th Street	Leighton to Highway 2	One-Way Pairs		X	X	X	X	X							
9	Vine Street & Holdrege Street	Antelope Valley to 84th Street	One-Way Pairs		X	X	X	X	X							
10	A Street & South Street	9th Street to 70th Street	One-Way Pairs		X	X	X	X	X							
11	O Street	Antelope Valley to 98th Street	6 Lanes		X					X	X		X			X
12	2025 CP + Tech Recommendations	Modified 2025 Comp Plan	6 Lanes + Others													X

2030 CGBN = Continuing Growth Base Network

WORK IN PROGRESS

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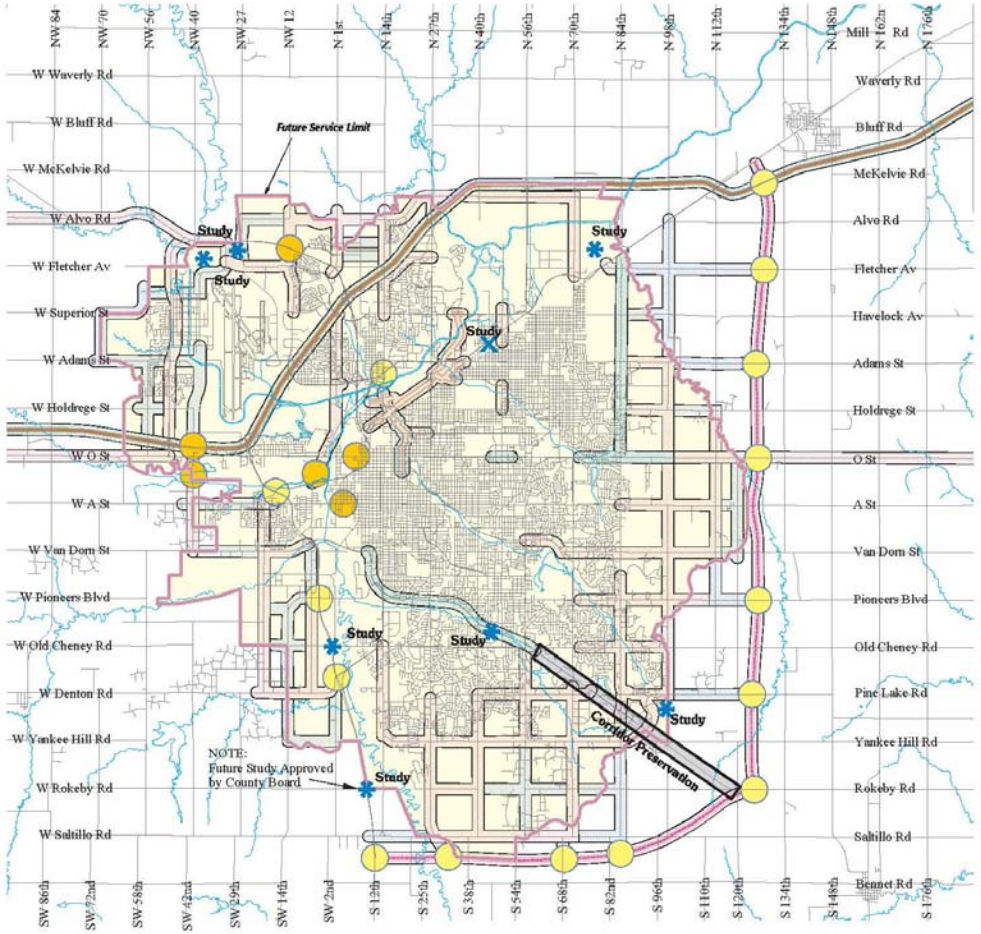
PROJECTS & STUDIES: LINCOLN AREA STREET & ROADWAY IMPROVEMENTS 2025



LEGEND

- Corridor Preservation
- Four Lane Freeway, 300 Ft. ROW
- 6 Lane Interstate Highway
- 2 Lanes + CTL
- 4 Lanes + TL
- 6 Lanes + TL
- Overpass
- Interchange
- Overpass/Interchange
- Study
- Street Closure Study
- Future Service Limit

Updated to April 26 - May 2, 2005

2025 Approved Comp Plan Network

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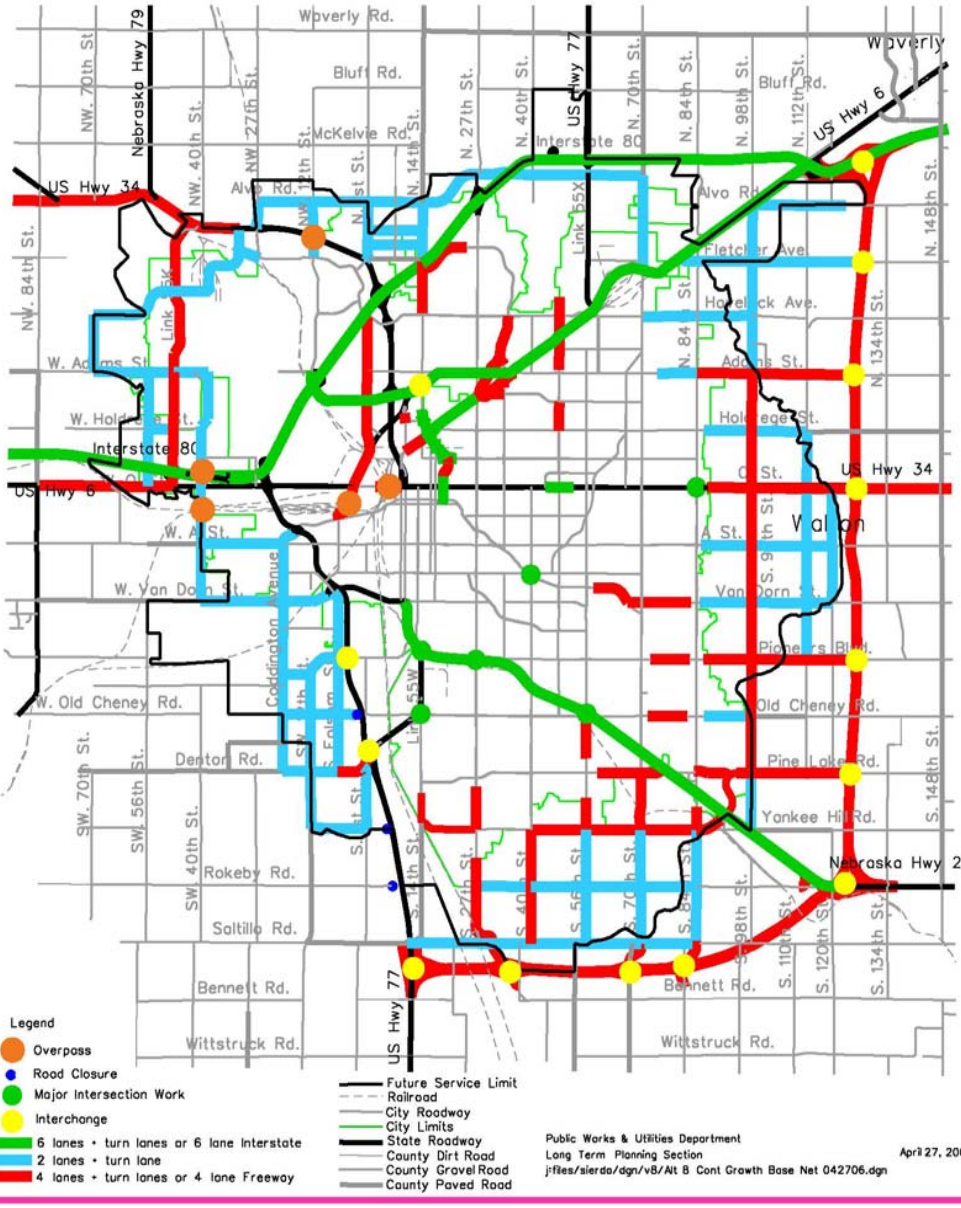
2030 Long Range Transportation Plan Update

Lincoln Area Street and Roadway Improvements **DRAFT**

Alternative 8 Added to the "Continuing Growth Base Network"



Alternative 8

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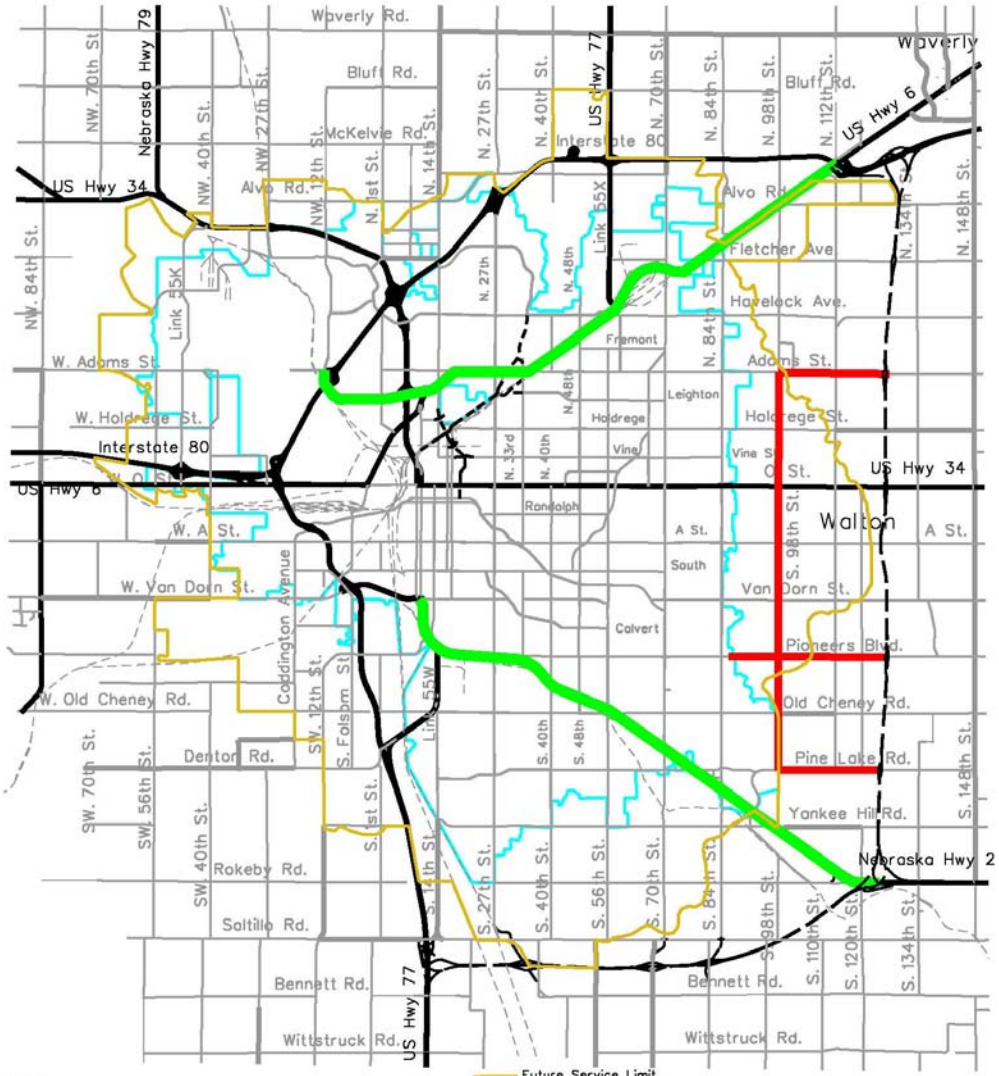
Proposed Alternative 8 Additions to "Continuing Growth Base Network"



Alternative 8 Additions

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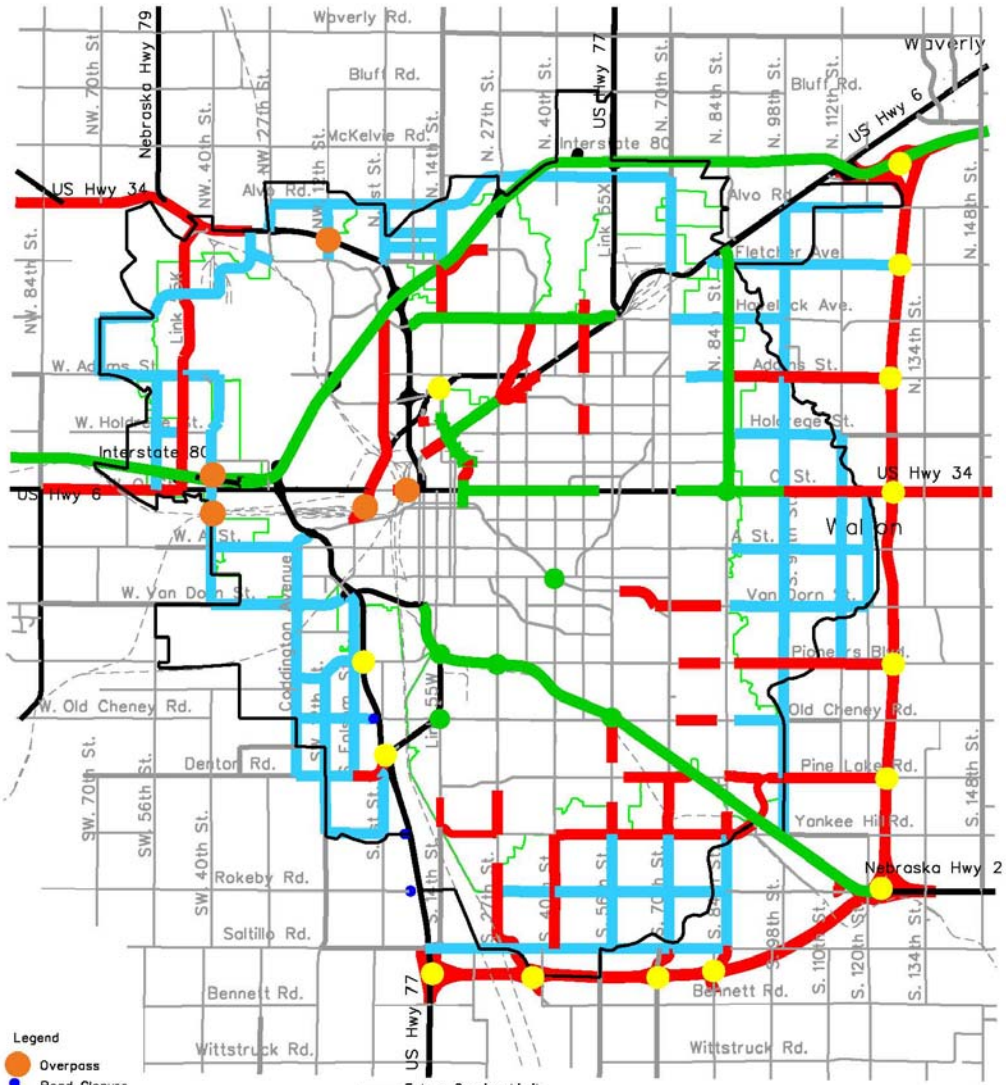

Alternative 9

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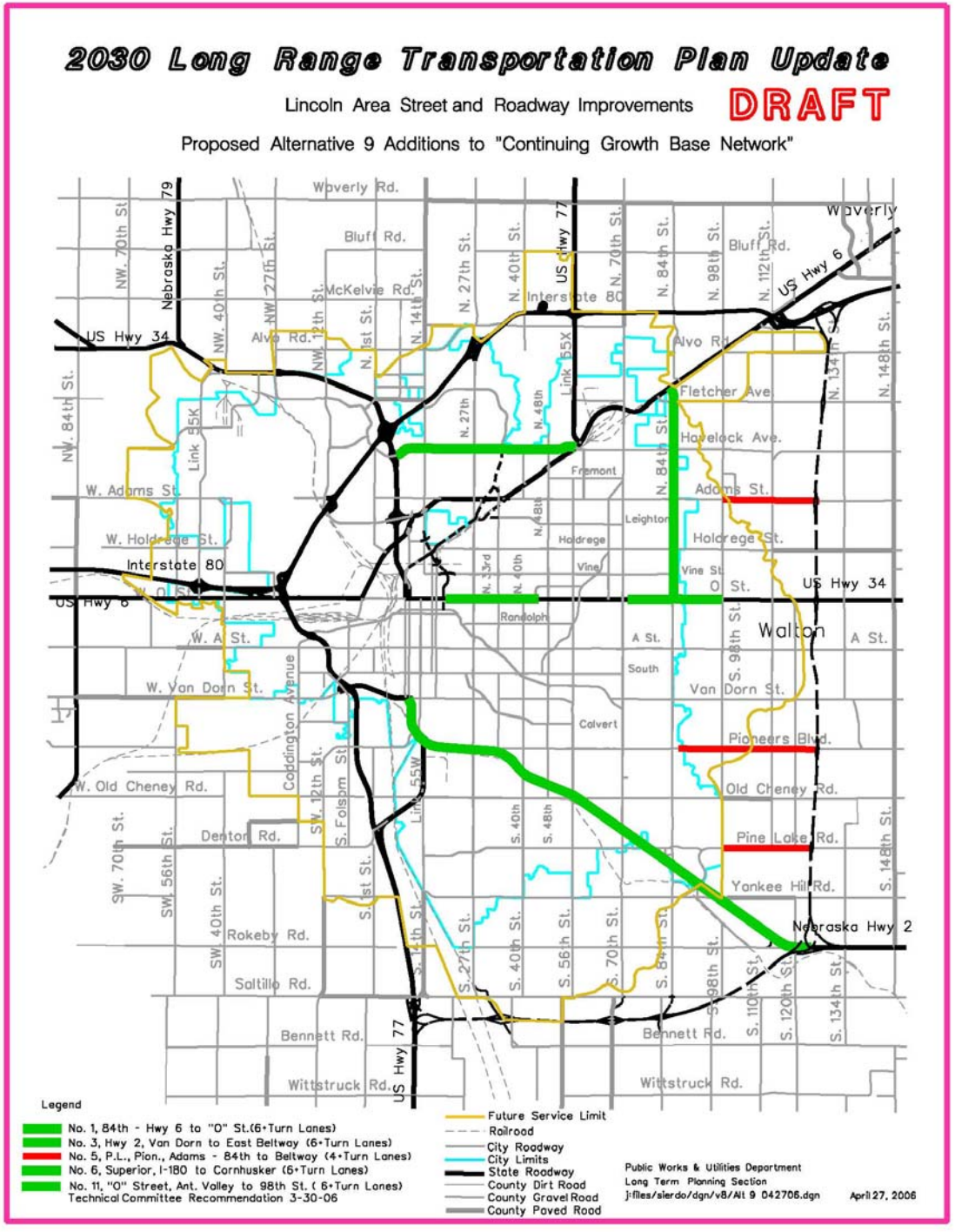

Alternative 9 Additions

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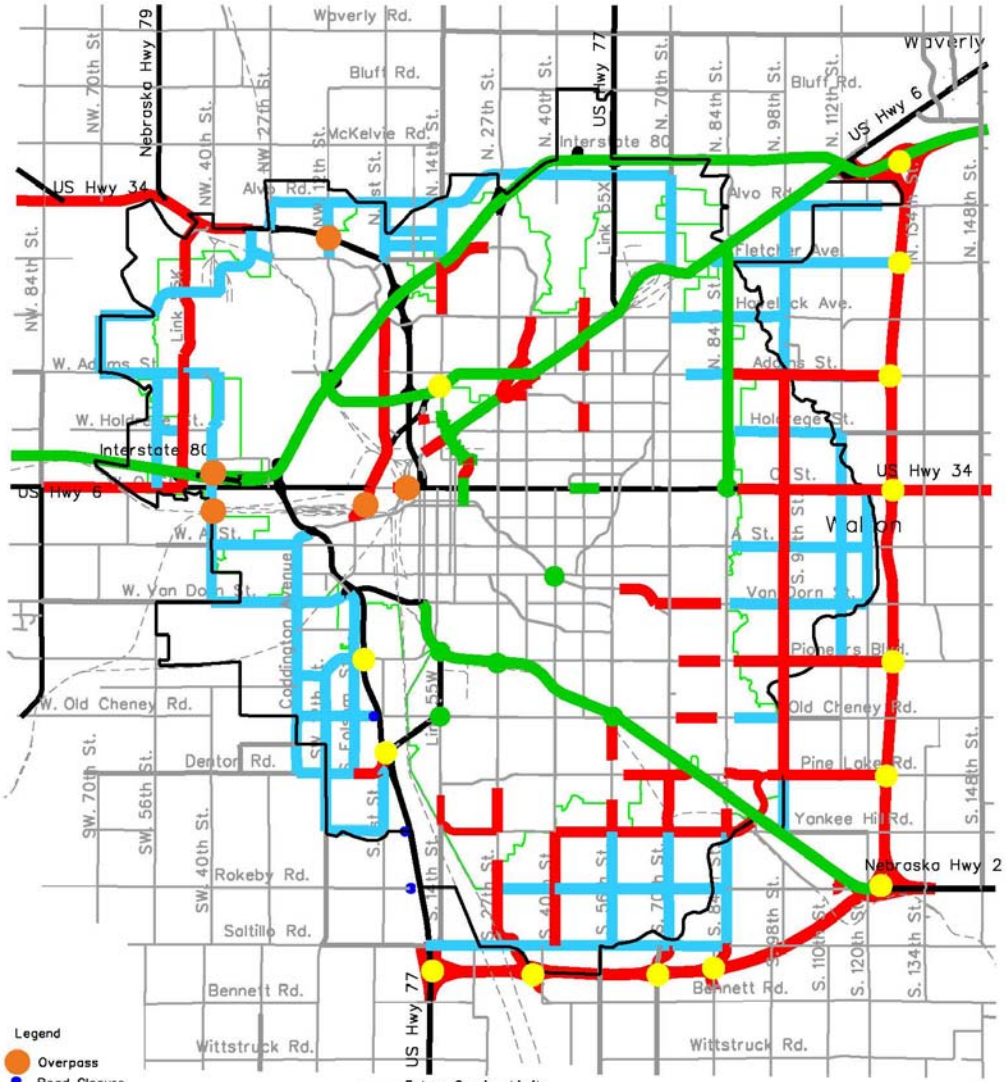

Alternative 10

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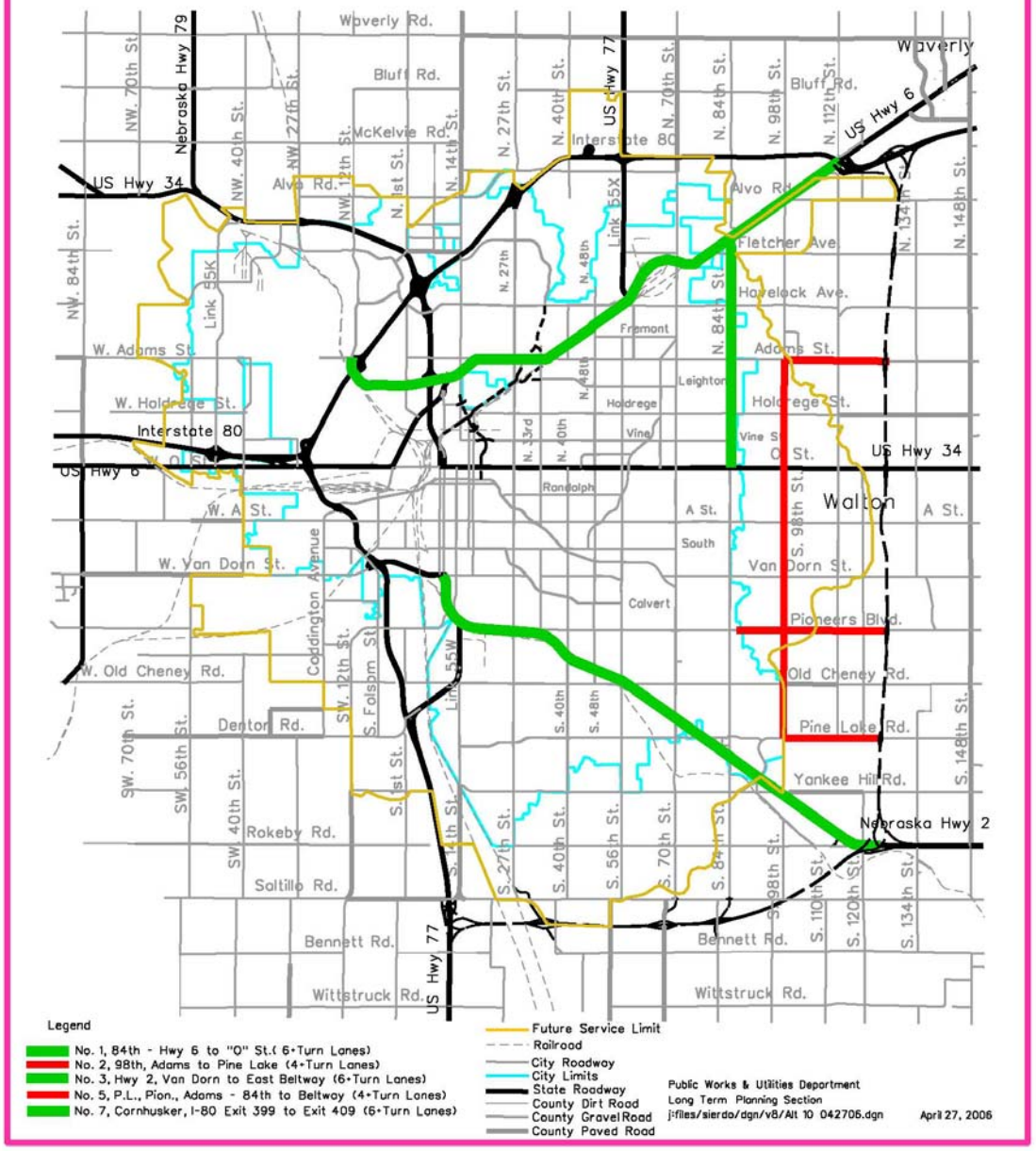

Alternative 10 Additions

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